TCEP

Tobacco Control Enhancement Project

Decreasing Youth Initiation of Smoking: Overview and Scientific Evidence

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Each smoker who dies as a result of smoking would, on average, live at least 15 additional years if he or she never smoked. Yet each year the ranks of smokers are joined by more than 1 million youth who decide to become smokers, ultimately reducing both the length and quality of their lives. Stemming the tide of this tragedy is what prevention is about. In public health, prevention has the goal of preventing a disease or negative health outcome before it occurs. For tobacco use, preventing smoking uptake involves decreasing the number of youth who become smokers during the vulnerable adolescent period.

If we prevent smoking in adolescence, the numbers of smokers will certainly decrease. Research indicates that very few people initiate smoking after their teens and 89% of current adult smokers started smoking before 19.[1] If we prevent smoking, adolescent health will improve in the short term because active youth smoking is associated with health problems such as asthma and bronchial hyperactivity, especially among girls.[2] If we even delay smoking uptake, we will improve long term health because earlier onset and later health problems are both related to the duration (years) and the intensity (amount) of tobacco use. For all these reasons, much attention has been directed to interventions designed to prevent smoking among youth.

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After rising rapidly in the early 1990s, adolescent smoking has declined significantly since 1996.[3] For example, between 1996 and 2001, current smoking (defined as smoking one or more cigarettes during the past 30 days) fell from 21 percent to 12 percent among 8th graders and from 30 percent to 21 percent among 10th graders. This is significant progress toward the Healthy People 2010 target of 16% smoking prevalence among all adolescents.[4] During the same period, rates of daily smoking were down 33 percent among 10th graders (from 18.3% to 12.2%) and 50 percent among 8th graders (from 10.4% to 5.5%). According to the National Longitudinal Study of Adolescent Health,[5] there are no gender differences in smoking prevalence. White youth smoke more than Hispanic youth and much more than Black youth, and youth from poorer families smoke more regardless of race, gender or family structure. Researchers suggest the declines in the past five years have not been by chance, but the result of concerted efforts by many individuals and organizations. In order for positive trends to continue, programs and policies need to be maintained. Without vigilance, new generations of youth continue to come along who may take up smoking.

This briefing paper reviews several intervention strategies to prevent smoking uptake and briefly summarizes the empirical evidence for each. Intervention strategies fall into two general types, program strategies, usually represented by school-based educational interventions and policy/environmental strategies, aimed at creating change in environmental conditions which influence youth such as norms, availability or regulations. More recently, they have been combined into comprehensive tobacco control interventions.

School-based Educational Interventions

Most efforts to prevent smoking among adolescents have been school programs for elementary and /or middle school youth. A wide variety of program curricula have been used, but all tend to fall into one of three main approaches that evolved over the past several decades. The earliest programs were based on an "information deficit or rational model" which assumed simply informing youth about the health risks of smoking would be a deterrent. The "affective education model," focused on internal influences beyond knowledge alone, such as beliefs, attitudes and intentions. The most recent approach has been a "social influence resistance model" which emphasizes the influence of the social environment (e.g. peers, family, cultural context) and the need to build skills to resist negative influences while developing generic decision-making, communication and social skills. Reviews across multiple studies consistently find the "social influence resistance model" most effective.[6] An Institute of Medicine study concluded "a brief school intervention that focuses on social influences and teaches refusal skills can have a modest but significant effect in reducing the onset and

level of tobacco use".[7] Such programs have produced reductions in smoking between 5 and 30 percent (with the upper range attainable only under "optimal" conditions).[8] Some school programs have also demonstrated results with multicultural populations.[9] However, concerns about long term impact of school-based educational interventions remain, because effects seem to dissipate over 1-4 years.[10]

Environmental / policy change interventions

In addition to smoking bans (see the "Secondhand smoke" briefing paper), environmental/policy change interventions include advertising restrictions, mass media interventions, youth access regulations and tobacco excise taxes. Each of these can be implemented :

Tobacco Advertising Restrictions: Internal tobacco industry documents provide compelling evidence that the industry has developed product lines and advertising campaigns aimed specifically at youth.[11] Youth are routinely and heavily exposed to tobacco advertising and the most popular cigarette brands among adolescents, Malboro and Camels, are those most heavily advertised. Some observers have even suggested that smoking among Black youth has decreased in reaction to a perception that the tobacco industry has specifically targeted young Blacks.[12] While the research literature linking advertising to smoking initiation is not definitive, evidence for an association between exposure to advertising and smoking initiation has been reported in longitudinal studies. For example, a longitudinal study in California reported that adolescents who had a favorite tobacco advertisement and / or received a tobacco promotional item were significantly more likely to initiate smoking in the following three years.[13] Tobacco control advocates therefore seek restrictions on tobacco advertising ranging from restricting the extent of advertising and promotions to banning tobacco sponsorship at public and private events. Research on the impact of advertising restrictions is inconsistent, possibly due to the fact that partial and complete bans are not differentiated in studies.[14] A recent review of the literature in this area concluded that a complete advertising bans could reduce tobacco consumption by approximately 6%, an amount that could have an important health impact.[15]

Mass media campaigns: Using mass media for anti-tobacco campaigns is thought to be a particularly appropriate strategy for a youth culture which is heavily media oriented. The Rhode Island Department of Health and the American Legacy Foundation have sponsored aggressive anti-tobacco media campaigns. Media campaigns aimed at youth with anti-smoking and anti-industry messages have grown in reach and frequency of exposure. The proportion of youth who report awareness of such ads has increased substantially, as has the proportion of youth who credit ads with helping to influence them not to smoke.[16] Some states with aggressive media campaigns aimed at youth have reported smoking declines. For example, a campaign in Florida was associated with a 54 percent decline in current smoking from 1998 to 2000 among middle school students and a 24 percent decline among high school students.[17] However, definitive studies using experimental designs to test the unique impact of media campaigns on tobacco use among youth are few in number and have shown varying results. Media advocacy may be best used to establish a fertile ground for policy change or to amplify the effects of other interventions. For example, one study compared two communities, one which received an educational program alone and one which received the same educational program along with a media campaign. The community receiving the media campaign had an almost 40% lower rate of smoking than the community receiving the education program alone.[18]

Youth access interventions: Youth access interventions seek to reduce the availability of cigarettes to adolescents through policies such as regulation of sellers, restrictions on the distribution of free products or samples and regulations of where and how tobacco can be sold (e.g. vending machine sales, etc). Many policies have been implemented at the state and local levels[19] but studies clearly indicate that ongoing monitoring and enforcement is necessary to reduce illegal sales to minors.[20] In an experimental study of six communities, compliance in three communities which enforced tobacco sales laws rose to 82 percent, compared to 45 percent in three matched control communities.[21] Whether reduced sales translate into reduced youth smoking is, however, an open question, with varying results found in different studies. Some studies, including the one mentioned above, report no changes in youth perception of access to tobacco or in youth smoking prevalence. In contrast, an observational study of a community which passed an aggressive youth access ordinance and enforcement program found that both illegal sales were reduced and that experimental and habitual smoking decreased by over 50 percent from pretest and posttest observations and differences were maintained over seven years.[22] Another possibility is that youth access restrictions may have beneficial effects not by reducing access directly but by communicating a community norm. For example, a longitudinal study found that youth living in communities which adopted youth access ordinances were significantly less likely to become established smokers over the next 4 years than youth from communities without such ordinances. The authors speculated that even though access to cigarettes was not reduced, youth access laws may help to change adolescent attitudes through communicating community norms and standards.[23]

Tobacco Excise Taxes: Increasing taxes on tobacco can reduce adolescent cigarette consumption in several ways. Some adolescents quit smoking, some reduce the amount that they smoke, and others do not start smoking in the first place. Adolescents are more sensitive to increases in cigarette prices than adults because they have less money and because it is easier not to start smoking than to quit. For adults, most estimates indicate that a 10% price increase will reduce demand by 4%. Studies examining the effects of price increases on smoking uptake in youth estimate that a 10% price increase will reduce uptake by approximately 6%.[23]

Comprehensive Tobacco Control Interventions

Comprehensive Tobacco Control interventions strive to "change the way that tobacco is promoted, sold and used while changing the knowledge, attitudes and practices of young people, tobacco users and nonusers."[25] For example, a comprehensive tobacco control intervention might combine a school curriculum for youth to prevent initiation of smoking, a media campaign aimed at reducing parental smoking in the presence of youth, a policy advocating a municipal smoking ban for restaurants and increased enforcement of ordinances prohibiting youth access to tobacco. Comprehensive Tobacco Control interventions may be targeted to a geographical community (e.g. municipal) or a community of common interest (e.g. the Southeast Asian Community). Comprehensive tobacco control interventions employ coalitions, partnerships or task forces to bring about changes through processes of participation, collaborative planning and implementation across different agencies and community sectors.

Many communities have begun to employ comprehensive approaches to tobacco control, but few studies have tested this approach with rigorous designs. However, results from selected comprehensive interventions conducted by researchers are encouraging. They include a comprehensive intervention which after two years found adolescent smoking rates averaged 19% in experimental communities compared to a 29% in control communities.[26] Another study directly tested adding a comprehensive community level intervention to a school-based program. Eight matched pairs of small communities were randomly assigned to receive either a school-based prevention program alone or a school-based program plus a community program. The community program included components of a) media advocacy for publicizing the tobacco problem, b) youth anti-tobacco activities, c) a family communication module designed to promote no use messages from parents, and d) activities to reduce youth access to tobacco. Smoking prevalence in communities with the comprehensive program was significantly lower than in comparison communities after one year of intervention and one year after the intervention had ended.[27] While comprehensive tobacco control initiatives are promising, the challenge for communities will be to implement, sequence and coordinate complex multiple component interventions and sustain their efforts over time.

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